

Product name:
INGEO™ LACTIDE

Product code:
M3002

Revision Number: 11 **Revision date:**
07/06/2022

Print date:
07/06/2022

SAFETY DATA SHEET

In accordance with 29 CFR 1910.1200:2012, ANSI Z400.1-2010, and ISO 11014-1: 2009.
In accordance with WHMIS 2015.

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

Product name: INGEO™ LACTIDE

Product code: M3002

Product Use: Use as an intermediate, Polymer preparations and compounds, raw material for polymer (monomer)

Supplier:

NatureWorks
17400 Medina Rd, Suite# 800
Plymouth, MN 55447
sdsinquiry@natureworksllc.com
+1-952-562-3450

Emergency telephone numbers (24 hours a day):

(Medical Information) +1-(651)-632-9273
(Transportation Information) CHEMTREC: +1-(800)-424-9300 (in the United States)
(Transportation Information) CHEMTREC: +1-(703)-527-3887 (outside the United States)

2. HAZARDS IDENTIFICATION

Classification: Serious Eye Damage/Irritation, Category 1.

Symbols/Pictograms:



Signal word: Danger

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Hazard Statements: H318 - Causes serious eye damage

Precautionary Statements: P280 - Wear protective gloves/protective clothing/eye protection/face protection Do not get in eyes P260 Do not breathe dust or spray mist IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

Potential health effects: See Section 11 for more information

Environmental precautions: See Section 12 for more information

Other hazards: Decomposes in contact with water Hazardous decomposition products: Lactic Acid The following addresses exposure to some of the ingredients of Lactic Acid, not exposure to the product Avoid contact with eyes, skin and clothing Contact may irritate or burn skin and eyes Contact may cause burns to skin and eyes May cause permanent eye injury For additional information, see Safety Data Sheet

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name and CAS	Weight %	OSHA Exposure Limits:	ACGIH Exposure Limits:
Lactide 95-96-5	90 - 100%	None	None

All ingredients in quantities > 1.0% (0.1% for carcinogens) that are potentially hazardous per OSHA definitions.

4. FIRST AID MEASURES

Emergency telephone numbers (24 hours a day):
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Eye contact: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove any contact lenses if easy to do. Call a physician or Poison Control Center immediately.

Skin contact: Rinse immediately with plenty of water for at least 15 minutes. If symptoms persist, call a physician.

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Inhalation: Move to fresh air. If symptoms persist, call a physician.

Ingestion: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Call a physician or Poison Control Center immediately. Never give anything by mouth to an unconscious person.

Notes to physician: Treatment should be symptomatic and supportive.

5. FIRE-FIGHTING MEASURES

Flammability:

Autoignition temperature: Not determined

Flammability Limits in Air:

Flammable limits in air - lower (%): Not determined

Flammable limits in air - upper (%): Not determined

Suitable extinguishing media: Carbon dioxide (CO₂), Dry chemical, Foam, Water spray or fog, Alcohol resistant foams are preferred if available. General-purpose synthetic foams (including AFFF) or protein foams may function, but much less effectively.

Unsuitable extinguishing media: Do not use a solid water stream as it may scatter and spread fire

Special protective equipment for firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Evacuate area and fight fire from a safe distance. Avoid contact with skin and eyes. In case of contact. Positive pressure self-contained breathing apparatus (SCBA) and structural firefighters' protective clothing will provide adequate protection.

Under fire conditions: Water mist may be used to cool closed containers.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Isolate the spill area. Remove personnel from immediate area until material has cooled, either naturally or after soaking with an inert absorbent (e.g. vermiculite). Use with proper personal protective equipment (see Section 8). Avoid contact with skin and eyes. Ensure adequate ventilation. Avoid breathing vapors

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or mists. Avoid contact with eyes. Sweep up to prevent slipping hazard.

Environmental precautions: Do not allow material to contaminate ground water system. Do not flush into surface water or sanitary sewer system.

Methods for cleaning up: Protect from water. Soak up with inert absorbent material. Allow material to solidify, and scrape up. Sweep up and shovel into suitable containers for disposal. Decomposes in contact with water. Do not release unneutralized acid. Absorb spilled liquid in suitable material. See section 13 for more information.

7. HANDLING AND STORAGE

Safe handling advice: Avoid contact with skin, eyes and clothing. Workers should be protected from the possibility of contact with molten material during fabrication. Avoid dust formation.

Storage: Keep containers tightly closed in a dry, cool and well-ventilated place. Keep under nitrogen blanket. Solidifies at about 176 °F (80 °C). Handling: Temperatures above 100 °C / 212 °F.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure controls:

Engineering measures: Ensure adequate ventilation. Provide appropriate exhaust ventilation at machinery and at places where dust can be generated.

Exposure limits: Not Established.

Personal protective equipment:

Eye protection: Goggles; Face-shield; Safety glasses with side-shields

Skin and body protection: Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact

Hand protection: Preventive skin protection. The instructions and information provided by the glove manufacturer on use, storage, maintenance and replacement must be followed.

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Hygiene measures: Ensure that eyewash stations and safety showers are close to the workstation location. Handle in accordance with good industrial hygiene and safety practice. Keep working clothes separately.

Respiratory protection: Vapors and/or aerosols which may be formed at elevated temperatures may be irritating to eyes and respiratory tract. Use NIOSH-approved air-purifying respirator with organic vapor cartridge or canister, as appropriate. Consult an industrial hygiene professional prior to respirator selection and use. Use a positive-pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air-purifying respirators may not provide adequate protection. **WARNING:** Air purifying respirators do not protect workers in oxygen-deficient atmospheres.

Special hazard: Workers should be protected from the possibility of contact with molten material during fabrication.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:	Solid Liquid
Color:	Yellow Amber
Odor:	Acrid
pH:	No information available
Vapor pressure:	Not determined
Vapor density:	Not determined
Evaporation rate:	Not determined
Partition Coefficient (n-octanol/water):	Not determined
Density:	Not determined
Decomposition temperature:	Not determined
Boiling point / boiling range:	482-500°F / 250-260°C @ 101.3 kPa
Melting point / melting range:	131°F / 55°C @ 101.3 kPa
Autoignition temperature:	Not determined
Flash point:	150-160 °C
Flammability:	No information available
Flammability Limits in Air:	No information available
Water solubility:	Not determined
Solubility:	No information available
Viscosity:	Not determined
Other Standards:	None

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10. STABILITY AND REACTIVITY

Reactivity: No data available.

Chemical stability: Hygroscopic. Stable under recommended storage conditions.

Conditions to avoid: Temperatures above 440F (230C). Exposure to moisture. Heat. Due to gaseous decomposition products, overpressure can occur in tightly sealed containers.

Materials to avoid: Strong bases, Oxidizing agents, Nitric acid, Hydrofluoric acid

Hazardous decomposition products: Carbon dioxide, Carbon monoxide (CO), Aldehydes, Organic acids

Possibility of hazardous reactions: None expected under conditions of normal use.

Polymerization: Polymerization can occur. At elevated temperatures organometallic compounds, nitric acid and hydrofluoric acid can catalyze polymerization.

11. TOXICOLOGICAL INFORMATION

Principle routes of exposure: Eye contact, Skin contact, Inhalation, Ingestion.

Acute toxicity: Specific symptoms in animal studies. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. May cause adverse kidney effects.

Local effects: Decomposes in contact with water. Hazardous decomposition products: Lactic Acid. The following addresses exposure to some of the ingredients of Lactic Acid, not exposure to the product. Avoid contact with eyes, skin and clothing. Contact may irritate or burn skin and eyes. Contact may cause burns to skin and eyes. May cause permanent eye injury. For additional information, see Safety Data Sheet.

Specific effects: Inhalation may provoke the following symptoms: Lung irritation. Severe shortness of breath. Difficulty in breathing. Ingestion may provoke the following symptoms: Nausea. Diarrhoea. Vomiting.

Long term toxicity: No data available

Mutagenic effects: Tests on bacterial or mammalian cell cultures did not show

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mutagenic effects. Did not show mutagenic effects in animal experiments

Reproductive toxicity: Based on available data, the classification criteria are not met

Carcinogenic effects: Based on available data, the classification criteria are not met.

Target organ effects: Reported animal effects, In case of ingestion, Organs affected:, stomach, kidneys

Skin: LD50/dermal/rabbit > 2000 mg/kg

Ingestion: LD50/oral/rat = >5000 mg/kg

12. ECOLOGICAL INFORMATION

Ecotoxicity effects:. No data available

Persistence and degradability: No data available

Bioaccumulation: Bioconcentration factor (BCF) < 100 Not likely to bioaccumulate

Mobility: Partition coefficient n-octanol /water (log KOW) = 1.65 Henry's Law Constant = 1.22×10^{-5} atm m³/mol log Koc = 50 If product enters soil, it will be mobile and may contaminate groundwater

13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products: Dispose of in accordance with federal, state and local regulations. Dispose of wastes in an approved waste disposal facility. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

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14. TRANSPORT INFORMATION

U.S. Department of Transportation (DOT):

Proper shipping name: This product is not regulated when shipped at room temperature.

Hazard class: Not regulated

UN-No: None

Packing group: None

Hazardous Substances RQs: None

Additional information: *Elevated temperature information for transport, Temperatures above 100 °C / 1003 °F, UN3257, Elevated temperature liquid, n.o.s., at or above 100°C (212°F), and below its flash point, 9, III, APPLIES ONLY DURING ROAD TRANSPORT, IATA - Substances Forbidden from Air Transport*

IMDG:

Proper shipping name: This product is not regulated when shipped at room temperature.

Hazard class: Not regulated

Packing group: None

Additional information: *Elevated temperature information for transport, Temperatures above 100 °C / 1003 °F, UN3257, Elevated temperature liquid, n.o.s., at or above 100°C (212°F), and below its flash point, 9, III, APPLIES ONLY DURING ROAD TRANSPORT, IATA - Substances Forbidden from Air Transport*

ICAO/IATA:

Proper shipping name: This product is not regulated when shipped at room temperature.

Hazard Class: Not regulated

Packing group: None

Additional information: *Elevated temperature information for transport, Temperatures above 100 °C / 1003 °F, UN3257, Elevated temperature liquid, n.o.s., at or above 100°C (212°F), and below its flash point, 9, III, APPLIES ONLY DURING ROAD TRANSPORT, IATA - Substances Forbidden from Air Transport*

15. REGULATORY INFORMATION

(not meant to be all inclusive - selective regulations represented)

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Regulatory requirements are subject to change and may differ between locations. It is the User's responsibility to ensure that all activities comply with all federal, state or provincial and local laws and regulations. The following specific information is made for the purpose of complying with numerous national, federal, state or provincial, and local laws and regulations. See other sections for health and safety information.

U.S. REGULATIONS

TSCA Inventory List: Listed

STATE REGULATIONS

California Proposition 65: Not Listed

INTERNATIONAL INVENTORIES

Canada NDSL Inventory List : Listed
REACH/EU EINECS List : Listed
Japanese inventory (ENCS): Listed
Australian Industrial Chemicals Introduction Scheme (AICIS) Not Listed
Korean chemical inventory: Listed
Phillipines (PICCS) inventory: Not Listed
China inventory of existing chemical substances list : Not Listed
TCSI - Taiwan Chemical Substance Inventory Listed

16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION

Label information: INGEO™ LACTIDE
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Reason for revision: Document Review

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Recommended restrictions: None
Prepared by: NatureWorks LLC Health and Safety

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NOTICE REGARDING APPLICATION RESTRICTIONS:

The company does not recommend any of its products, including samples, for use: (A) in any application which is intended for any internal contact with human body fluids or body tissues (B) as a critical component in any medical device that supports or sustains human life; and (C) specifically pregnant women or in any applications designed specifically to promote or interfere with human reproduction.

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